

ORANGE WATER AND SEWER AUTHORITY
WORK SESSION OF THE BOARD OF DIRECTORS
DECEMBER 8, 2016

The Board of Directors of the Orange Water and Sewer Authority (OWASA) held a work session on Thursday, December 8, 2016 at 6:00 P.M. in OWASA's Community Room in the Administration Building, 400 Jones Ferry Road, Carrboro.

Board Members present: John A. Young, Chair; Jeff Danner, Vice Chair; Barbara Foushee, Secretary; Yinka Ayankoya; Terri Buckner; David Moreau; Bob Morgan; Heather Payne; and Ruchir Vora.

OWASA staff present: Ed Kerwin; Denise Battle; Mary Darr; Greg Feller; Andrea Orbich; Todd Taylor; Mary Tiger; Stephen Winters; and Robert Epting, Esq., Epting and Hackney.

Others present: Margaret Holton, Water, Sewer and Reclaimed Water Coordinator, University of North Carolina at Chapel Hill.

There being a quorum present, Chair John Young called the meeting to order.

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MOTIONS

1. Terri Buckner made a motion to approve the Minutes of the October 27, 2016 Meeting of the Board of Directors as revised by adding the following sentence on page 3, to the end of the third paragraph: "*For properties without sub-metering, a resident's dwelling unit expenses do not increase or decrease no matter how much water the resident uses.*" Second by Barbara Foushee and unanimously approved.
2. Terri Buckner made a motion to approve the Minutes of the November 3, 2016 Special Meeting of the Board of Directors; second by Barbara Foushee and unanimously approved.
3. Terri Buckner made a motion to approve the Minutes of the November 10, 2016 Meeting of the Board of Directors; second by Barbara Foushee and unanimously approved.
4. Terri Buckner made a motion to approve the Minutes of the November 10, 2016 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Barbara Foushee and unanimously approved.
5. Robert Morgan made a motion to approve the Resolution Adopting a Year-Round Water Commodity Rate for the Multi-Family Master-Metered Customer Class to be effective on and after May 1, 2017; second by Terri Buckner and the motion passed with a vote of five to four with Jeff Danner, Dave Moreau, Heather Payne and John Young opposed.

6. Heather Payne made a motion to approve the Resolution Approving an Update to OWASA's Cross-Connection Control Ordinance with revisions; second by Jeff Danner and unanimously approved.

7. Dave Moreau made a motion to approve the proposed Affordability Outreach Program Update and Plan (Year 2: January 2017 – December 2017) and to authorize staff to implement the program in accordance with the approach described in the Plan; second by Robert Morgan and unanimously approved.

8. Robert Morgan made a motion that the Board continue in Closed Session following the Board Work Session to discuss a personnel matter; second by Terri Buckner, and the motion passed with a vote of six to three with Jeff Danner, Barbara Foushee and Dave Moreau opposed.

ANNOUNCEMENTS

John Young said that any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time; none were disclosed.

Mr. Young wished Ruchir Vora a happy birthday and thanked Jeff Danner for chairing the November 10th meeting.

ITEM ONE: APPROVE THE ADVANCED METERING INFRASTRUCTURE COMMUNITY ENGAGEMENT PLAN

The Board accepted the Community Engagement Plan for the Advanced Metering Infrastructure Project – Procurement and Installation Phase.

ITEM TWO: MINUTES

Terri Buckner made a motion to approve the Minutes of the October 27, 2016 Meeting of the Board of Directors as revised by adding the following sentence on page 3, to the end of the third paragraph: "*For properties without sub-metering, a resident's dwelling unit expenses do not increase or decrease no matter how much water the resident uses.*" Second by Barbara Foushee and unanimously approved. Please see Motion No. 1 above.

ITEM THREE: MINUTES

Terri Buckner made a motion to approve the Minutes of the November 3, 2016 Special Meeting of the Board of Directors; second by Barbara Foushee and unanimously approved. Please see Motion No. 2 above.

ITEM FOUR: MINUTES

Terri Buckner made a motion to approve the Minutes of the November 10, 2016 Meeting of the Board of Directors; second by Barbara Foushee and unanimously approved. Please see Motion No. 3 above.

ITEM FIVE: MINUTES

Terri Buckner made a motion to approve the Minutes of the November 10, 2016 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Barbara Foushee and unanimously approved. Please see Motion No. 4 above.

ITEM SIX: CONSIDER A MOTION TO APPROVE THE PROPOSED YEAR-ROUND WATER RATE FOR MULTI-FAMILY MASTER-METERED CUSTOMERS

After discussion, the Board approved changing the water rate for Multi-Family Master-Metered customers (such as apartments) from seasonal rates, which vary by time of year, to a year-round water rate of \$5.67 per 1,000 gallons effective on May 1, 2017. Staff will notify customers and other stakeholders of the Board's decision.

Robert Morgan made a motion to approve the Resolution Adopting a Year-Round Water Commodity Rate for the Multi-Family Master-Metered Customer Class to be effective on and after May 1, 2017; second by Terri Buckner and the motion passed with a vote of five to four with Jeff Danner, Dave Moreau, Heather Payne and John Young opposed. Please see Motion No. 5 above.

ITEM SEVEN: RESOLUTION APPROVING REVISIONS TO OWASA'S ORDINANCE FOR THE CONTROL OF BACKFLOW AND CROSS-CONNECTION

The Board reviewed the proposed revisions to OWASA's Ordinance for the Control of Backflow and Cross-Connection and agreed to make the following two revisions: Section 1.3.4 Consumer Responsibility, staff will clarify this section with the following wording "to include installation, operation and maintenance;" and Section 9. Variances "...applications must be made within ~~ten~~ 21 calendar days." Staff will notify stakeholders of the changes to the ordinance and provide educational outreach.

Heather Payne made a motion to approve the Resolution Approving an Update to OWASA's Cross-Connection Control Ordinance with revisions; second by Jeff Danner and unanimously approved. Please see Motion No. 6 above.

ITEM EIGHT: AFFORDABILITY PROGRAM UPDATE AND PLAN

The Board discussed the draft plan for affordability outreach in the coming year. Staff will develop a work plan with tasks and milestones and share it with the Board.

Dave Moreau made a motion to approve the proposed Affordability Outreach Program Update and Plan (Year 2: January 2017 – December 2017) and to authorize staff to implement the program in accordance with the approach described in the Plan; second by Robert Morgan and unanimously approved. Please see Motion No. 7 above.

ITEM NINE: DISCUSSION OF KEY PERFORMANCE INDICATOR REPORT

The Board discussed and gave staff feedback on proposed changes in Key Performance Indicators (KPI). The Board approved implementing improvements and agreed to schedule semi-annual discussion of the KPIs.

ITEM TEN: DISCUSS DRAFT EXECUTIVE DIRECTOR PERFORMANCE GOALS

The Board agreed that the Executive Director will update the Key Focus Areas for OWASA's Executive Director for the period of October 2016 to September 2017 as discussed with the Board, e-mail the Board the revised draft, and invite feedback/questions about one week before the document is distributed in a future Board consent agenda.

Robert Morgan made a motion that the Board continue in a Closed Session following the Board Work Session to discuss a personnel matter; second by Terri Buckner and the motion passed with a vote of six to three with Jeff Danner, Barbara Foushee and Dave Moreau opposed. Please See Motion No. 8 above.

ITEM ELEVEN: REVIEW BOARD WORK SCHEDULE

The Board agreed to remove approval of Long-Range Water Supply Plan Goals and Objectives from the January 26, 2017 agenda.

ITEM TWELVE: EXECUTIVE DIRECTOR WILL SUMMARIZE THE KEY STAFF ACTION ITEMS FROM THE WORK SESSION

In addition to items noted above in agenda items 6 through 10, staff actions will include:

- Determine whether the Board's discussion of employee health and dental insurance should be rescheduled from January 12, 2017 to an alternate meeting.
- Provide the Board via e-mail the expected timeline for discussing Jordan Lake water quality.
- In the fall of 2017, schedule Board review of the impact, if any, of the new year-round rate for multi-family master-metered customers.
- Evaluate the need to update the Water Commodity Surcharges Applicable Under Water Use Restrictions as a result of the Board's decision to implement a year-round rate for multi-family master-metered customers.

- Provide the Board by e-mail the results of the recently completed water audit to include staff's observations on same.

ITEM THIRTEEN: CLOSED SESSION

Without objection, the Board continued in Closed Session for the purpose of discussing a personnel matter per Motion No. 8 above.

The meeting was adjourned at 9:20 P.M.

Respectfully submitted by:



Andrea Orbich

Executive Assistant/Clerk to the Board

Attachments

**RESOLUTION ADOPTING A YEAR-ROUND WATER COMMODITY RATE
FOR THE MULTI-FAMILY MASTER-METERED CUSTOMER CLASS
TO BE EFFECTIVE ON AND AFTER MAY 1, 2017**

WHEREAS, Orange Water and Sewer Authority (OWASA) has an adopted *Schedule of Rates, Fees, and Charges* as permitted under North Carolina General Statute 162A-9 and Section 7.04 of OWASA's Amended and Restated Bond Order (Bond Order); and

WHEREAS, General Statute 162A-6(9) and Section 7.04 of OWASA's Bond Order empower and direct the Authority to fix and revise from time to time and to collect rates, fees and other charges for the use of or for the services and facilities furnished by any system operated by the Authority; and

WHEREAS, results of a cost of service study conducted in Fiscal Year 2016 indicated that justification exists for changing the water commodity rate for the multi-family master-metered customer rate class from a seasonal rate to a year-round rate; and

WHEREAS, the Board of Directors wishes to improve the understandability and affordability of OWASA's bills for monthly water and sewer service.

NOW, THEREFORE, BE IT RESOLVED:

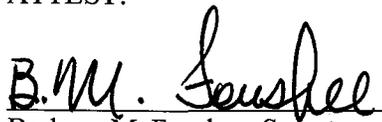
1. That OWASA's *Schedule of Rates, Fees, and Charges* is hereby amended to reflect a change in the water commodity rate charged to the multi-family master-metered customer rate class from a seasonal rate of \$4.16 per 1,000 gallons from October to April, and \$7.91 per 1,000 gallons from May to September, to a year-round rate of \$5.67 per 1,000 gallons.
2. That the change to a year-round water commodity rate for the multi-family master-metered customer rate class will be effective on and after May 1, 2017.
3. That the Executive Director is hereby directed to give proper notice as required by the Sale and Purchase Agreements and to take the necessary steps to implement the *Schedule of Rates, Fees, and Charges*.

Adopted this 8th day of December 2016.



John A. Young, Chair

ATTEST:



Barbara M. Foushee, Secretary

**RESOLUTION APPROVING AN UPDATE TO OWASA'S
CROSS-CONNECTION CONTROL ORDINANCE**

WHEREAS, in order to protect the OWASA water distribution system and its consumers from the hazards presented by unpermitted cross-connections with and backflows into the System, the OWASA Board of Directors approved a Resolution Adopting Orange Water and Sewer Authority Ordinance for the Control of Backflow and Cross-Connection, effective January 21, 1999;

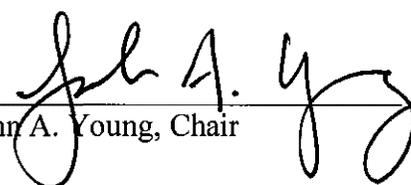
WHEREAS, as improvements in backflow technology and best industry practices have occurred since, the Board of Directors finds, and prudence requires that the said Ordinance should be amended to update and adopt modern best practices and to require the use of modern, advanced technology and to ensure the safety and security of OWASA's drinking water system; and

WHEREAS, OWASA Staff has prepared the attached revised Ordinance for the Control of Backflow and Cross-Connection to incorporate advances in technology and best practices, and to comply with all Federal, State and local regulations;

**NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF
THE ORANGE WATER AND SEWER AUTHORITY:**

1. That the attached Ordinance for the Control of Backflow and Cross-Connection, revised and effective as of January 1, 2017, is hereby approved and adopted.

Adopted this the 8th day of December, 2016.



John A. Young, Chair

ATTEST:



Barbara M. Foushee, Secretary

**ORANGE WATER & SEWER AUTHORITY
ORDINANCE FOR THE CONTROL OF
BACKFLOW AND CROSS-CONNECTIONS**

SECTION 1. CROSS-CONNECTION CONTROL - GENERAL POLICY

1.1 INTRODUCTION

The purpose of this Cross-Connection Control Ordinance is to define Orange Water and Sewer Authority (OWASA) as the water purveyor in the elimination of all cross-connections within its public potable water supply.

This Ordinance shall apply to all consumers connected to OWASA's public potable water supply.

This Ordinance complies with the Federal Safe Drinking Water Act (P.L. 93-523), the North Carolina Administrative Code (Title 15A, Subchapter 18C), and the North Carolina Plumbing Code as they pertain to cross-connections with the public water supply.

In accordance with General Statute 162A-9.1, OWASA is authorized and empowered to adopt this ordinance.

1.2 OBJECTIVE OF ORDINANCE

The specific objectives of the Cross-Connection Control Ordinance are as follows:

1.2.1 To protect the public potable water supply of OWASA from the possibility of contamination or pollution by isolating within the consumer's water system such contaminants, waterborne health hazards and other significant pollutants which could backflow into the public water systems.

1.2.2 To eliminate or control existing cross-connections, actual or potential, direct or indirect, between the consumer's potable water system(s) and nonpotable water system(s), plumbing fixtures and industrial piping systems.

1.2.3 To provide a continuing inspection program of cross-connection control; which will systematically and effectively prevent contamination or pollution of the public water system.

1.3 DESIGNATION OF RESPONSIBILITY

1.3.1 Health Agency's Responsibility

The North Carolina Department of Environmental Quality has the responsibility for promulgating and enforcing laws, rules, regulations, and policies applicable to all water purveyors in the State of North Carolina in carrying out an effective Cross-Connection Control Program.

The Division of Public Health also has primary responsibility of ensuring that the water purveyor operates a public potable water system free of actual or potential sanitary hazards including unprotected cross-connections. The Division of Public Health also has the responsibility of ensuring that the water purveyor provides an approved water supply at the service connection to the consumer's water system and, further, that the purveyor requires the installation, testing, and maintenance of an approved backflow prevention assembly on the service connection when required.

1.3.2. OWASA's Responsibility

Except as otherwise provided herein, OWASA is the water purveyor and is responsible for ensuring a safe water supply begins at the source and includes all the public water distribution system, including the service connection, and ends at the point of delivery to the consumer's water systems. In addition, OWASA shall exercise reasonable vigilance to ensure that the consumer has taken the proper steps to protect the public potable water system. OWASA will determine the degree of hazard or potential hazard to the public potable water system, the degree of protection required, and will ensure proper containment protection through an ongoing inspection program. OWASA will identify all facilities where approved backflow prevention assemblies are required to be installed.

When it is determined that a backflow prevention assembly is required for the protection of the public system, OWASA shall require the consumer, at the consumer's expense, to install an approved backflow prevention assembly at service connection, to test immediately upon installation and thereafter at frequency as determined by OWASA, to properly repair and maintain assembly or assemblies and to keep adequate records of each test and subsequent maintenance and repair, including materials and/or replacement parts(s) on his/her premises. If the assembly(s) is not installed as required by OWASA, the water service may be disconnected until such assembly(s) has been properly installed.

1.3.3. Plumbing Inspectors Responsibility

The plumbing inspection departments of the Town of Chapel Hill, Town of Carrboro, University of North Carolina, and Orange County have the responsibility to not only review building plans and inspect plumbing as it is installed but, they have the explicit responsibility of preventing cross-connections from being designed and built into the plumbing system within its jurisdiction. Where the review of building plans suggests or detects the potential for cross-connections being made an integral part of the plumbing system, the plumbing inspector has the responsibility, under the North Carolina Building Code, for requiring that such cross-connections be either eliminated or provided with backflow prevention equipment approved by the North Carolina State Building Code.

The plumbing inspector's responsibility begins at the point of delivery downstream of the first installed backflow prevention assembly and continues throughout the entire

length of the consumer's water system. The inspector should inquire about the intended use of water at any point where it is suspected that a cross-connection might be made or where one is actually called for by the plans. When such is discovered it shall be mandatory that a suitable, approved backflow prevention assembly approved by the North Carolina Building Code, North Carolina Department of Environmental Quality and OWASA be required by the plans and be properly installed.

1.3.4. Consumer Responsibility

The consumer has the primary responsibility of preventing pollutants and contaminants from entering his/her potable water system or the public potable water system and it is the consumer's responsibility to install and maintain an operable continuous appliance equipment to this end. The consumer's responsibility starts at the point of delivery from the public potable water system and includes all of his/her water system. The consumer shall maintain accurate records of tests and repairs made to backflow prevention assemblies and shall maintain such records for a minimum period of three (3) years. The records shall be on forms approved by OWASA and shall include the list of materials or replacement parts used.

Prior to any repair, overhaul, re-piping, or relocation of assembly(s), the consumer shall contact OWASA to determine if the device is still appropriate and obtain approval for use of such device. Following any repair, overhaul, re-piping, or relocation of an assembly, the consumer shall have it tested to ensure that it is in good operating condition and will prevent backflow. Tests, maintenance and repairs of backflow prevention assemblies shall be made by a Certified Backflow Prevention Assembly Tester.

It shall be the Consumer's responsibility to notify OWASA immediately if the customer's water system becomes contaminated or polluted or if there is reason to believe that a backflow incident has occurred from the customer's water system into the public water system.

1.3.5. Certified Backflow Prevention Assembly Tester Responsibility

When employed by the consumer to test, repair, overhaul, or maintain backflow prevention assemblies, a Certified Backflow Prevention Assembly Tester (Tester) will have the following responsibilities:

The Tester will be responsible for making competent inspections and for repairing, or overhauling backflow prevention assemblies and making reports of such repair to the consumer and OWASA on forms approved by OWASA. The Tester shall include the list of materials or replacement parts used. The Tester shall be equipped with and be competent to use all the necessary tools, gauges, manometers and other equipment necessary to properly test, repair, and maintain backflow prevention assemblies. It will be the Tester's responsibility to ensure that original manufactured parts are used in the repair of or replacement of parts in a backflow prevention assembly. It will be the Tester's further responsibility not to change the design, material or operational

characteristics of an assembly during repair or maintenance without prior approval of OWASA. A Tester shall perform the work and be responsible for the competency and accuracy of all tests and reports. The Tester shall provide a copy of all test and repair reports to the consumer and to OWASA within ten (10) business days of any completed test or repair work. A Tester shall maintain such records for a minimum period of three (3) years.

All Certified Backflow Prevention Assembly Testers must obtain and employ backflow prevention assembly test equipment which has been evaluated and/or approved by OWASA. All test equipment shall be registered with OWASA. All test equipment shall be checked for accuracy annually (at a minimum), calibrated, if necessary, and certified to OWASA as to such calibration, employing an accuracy/calibration method acceptable to OWASA.

SECTION 2. DEFINITIONS

2.1 AIR GAP

The term "air gap" shall mean a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air gap" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel - in no case less than 1 inch (2.54 cm).

2.2 APPROVED

Accepted by OWASA as meeting an applicable specification stated or cited in this ordinance or as suitable for the proposed use.

2.3 AUXILIARY WATER SUPPLY

Any water supply on or available to the premises other than the purveyor's approved public water supply will be considered as an auxiliary water supply. These waters may be contaminated or polluted or they may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

2.4 BACKFLOW

The term "backflow" shall mean the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source or sources. See terms Backpressure (2.7) and Backsiphonage (2.8).

2.5 BACKFLOW PREVENTION ASSEMBLY - TYPE

A "backflow prevention assembly" shall mean an assembly used to prevent backflow into a consumer or public potable water system. The type of assembly used should be

based on the degree of hazard either existing or potential (as defined herein). The types are:

- a. Reduced Pressure Principle Assembly (RP)
- b. Reduced Pressure Principle-Detector Assembly (Fire System) (RPDA)

Backflow prevention assemblies to be connected to OWASA's public water system are limited to those assemblies approved by the Foundation for Cross Connection Control and Hydraulic Research, University of Southern California, American Society of Sanitary Engineers (ASSE) and FM Approvals (for fire line installations)

2.6 CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTER

The term "Certified Backflow Prevention Assembly Tester" (Tester) shall mean a person who has proven their competency to the satisfaction of OWASA. Each person who is certified to make competent tests, or to repair, overhaul, and make reports on backflow prevention assemblies shall be knowledgeable of applicable laws, rules, and regulations, shall be a licensed plumber or have at least two (2) years experience under and be employed by a North Carolina licensed plumber or plumbing contractor, or have equivalent qualifications acceptable to OWASA, and must hold a certificate of completion from an approved training program in the testing and repair of backflow prevention assemblies.

2.7 BACKPRESSURE

The term "backpressure" shall mean any elevation of pressure in the downstream piping system (by pump, elevation of piping, or steam and/or air pressure) above the supply pressure at the point of consideration which would cause, or tend to cause, a reversal of the normal direction of flow.

2.8 BACKSIPHONAGE

The term "backsiphonage" shall mean a form of backflow due to a reduction in system pressure which causes a sub atmospheric pressure to exist at a site.

2.9 APPROVED CHECK VALVE

The term "approved check valve" shall mean a check valve that is drip-tight in the normal direction of flow when the inlet pressure is at least one (1) psi and the outlet pressure is zero. The check valve shall permit no leakage in a direction reversed to the normal flow. The closure element (e.g. clapper, poppet, or other design) shall be internally loaded to promote rapid and positive closure. An approved check valve is only one component of an approved backflow prevention assembly - i.e., reduced pressure principle assembly or reduced pressure detector assembly.

2.10 CONSUMER

The term "consumer" shall mean any person, firm, or corporation using or receiving water from OWASA water system.

2.11 CONSUMER'S WATER SYSTEM

The term "consumer's water system" shall include any water system commencing at the point of delivery and continuing throughout the consumer's plumbing system located on the consumer's premises, whether supplied by a public potable water or an auxiliary water supply. The systems may be either a potable water system or an industrial piping system.

2.12 CONSUMER'S POTABLE WATER SYSTEM

The term "consumer's potable water system" shall mean that portion of the privately owned potable water system lying between the point of delivery and point of use and/or isolation protection. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, store, or use potable water.

2.13 CONTAINMENT

The term "containment" shall mean preventing the impairment of the public potable water supply by installing an approved backflow prevention assembly at the service connection.

2.14 CONTAMINATION

The term "contamination" shall mean an impairment of the quality of the water which creates a potential or actual hazard to the public health through the introduction of hazardous or toxic substances or waterborne health hazards in the form of physical or chemical contaminants or biological organisms and pathogens.

2.15 CROSS-CONNECTION

A "cross-connection" shall mean any unprotected actual or potential connection or structural arrangement between a public or a consumer's water system and any other source or system through which it is possible to introduce any contamination or pollution, other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through which or because of which "backflow" can or may occur are considered to be cross-connections.

2.16 DEGREE OF HAZARD

The term "degree of hazard" shall be derived from the evaluation of conditions within a private water system which can be classified either a moderate or a severe hazard.

2.17 SEVERE HAZARD

The term "severe hazard" shall mean an actual or potential threat of contamination of a physical, chemical, biological, pathogenic or toxic nature to the public or consumer's potable water system to such a degree or intensity that there would be a danger to health.

2.19 MODERATE HAZARD

The term "moderate hazard" shall mean an actual or potential threat to the quality of the public or the consumer's potable water system. A moderate hazard is one that, if introduced into the public water supply system could be a nuisance to water customers but would not adversely affect human health.

2.20 HEALTH AGENCY

The term "health agency" shall mean the North Carolina Department of Environment and Natural Resources.

2.21 INDUSTRIAL FLUIDS

The term "industrial fluids" shall mean any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration such as would constitute a moderate or severe hazard if introduced into a public or consumer potable water system. Such fluids may include, but are not limited to: process waters; chemicals in fluid form; acids and alkalis; oils, gases; etc.

2.22 INDUSTRIAL PIPING SYSTEM

The term "industrial piping system" shall mean a system used by the consumer for transmission, conveyance or storage of any fluid, solid or gaseous substance other than an approved water supply. Such a system would include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, or store substances which are or may be polluted or contaminated.

2.23 ISOLATION

"Isolation" is the act of confining a localized hazard within a consumer's water system by installing approved backflow prevention assemblies. Disclaimer: OWASA may make recommendations, upon facility inspection, as to the usages of isolation devices/assemblies, but does not assume or have responsibility whatsoever for such installations.

2.24 NON-POTABLE WATER

Water that has not been approved for human consumption by the appropriate agency of the State of North Carolina.

2.25 POINT OF DELIVERY

"Point of delivery" shall generally be at the consumer's side of the meter, which are located adjacent to the public street where the OWASA's water distribution mains are located. The consumer shall be responsible for all water piping and control devices located on the consumer's side of the point of delivery.

2.26 POLLUTION

The term "pollution" shall mean an impairment of the quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

2.27 POTABLE WATER

The term "potable water" shall mean water from any source which has been approved for human consumption by the North Carolina Department of Environmental Quality (NCDEQ).

2.28 PUBLIC POTABLE WATER SYSTEM

The term "public potable water system" shall mean any publicly or privately owned water system operated as a public utility, under a current NCDEQ permit, to supply water for public consumption or use. This system will include all sources, facilities, and appurtenances between the source and the point of delivery such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, treat, or store potable water for public consumption or use.

2.29 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY

The term "reduced pressure principle backflow prevention assembly" shall mean an approved assembly containing within its structure a minimum of two (2) independently acting, approved check valves, together with a hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves and at the same time below the first check valve. The assembly shall operate to maintain the pressure in the zone between the two (2) check valves at an acceptable pressure level less than the pressure on OWASA's side of the assembly. At cessation of normal flow, the pressure between the two (2) check valves shall be less than pressure on OWASA's distribution supply side of the assembly. In case of leakage of either of the check valves, the differential relief valve shall operate to maintain the reduce pressure in the zone between the check valves by discharging to the atmosphere. When the differential

pressure in the zone is two pounds per square inch or less than the supply pressure, the relief valve shall open to the atmosphere.

This unit is located between two tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks. The assembly shall include four (4) properly located resilient seated test cocks and full flow characteristic resilient seated shut-off valves at each end of the assembly. The entire assembly shall meet the design and performance specifications as determined by the Foundation for Cross Connection Control and Hydraulic Research, University of Southern California, ASSE, and FM Approvals (if on a fire line).

2.30 REDUCED PRESSURE PRINCIPLE-DETECTOR ASSEMBLY

The term "reduced pressure principle-detector assembly" shall mean a specially designed assembly composed of a line-size approved reduced pressure principle backflow prevention assembly with a specific bypass water meter and a meter-sized approved reduced pressure principle backflow prevention assembly. The meter shall register (in U.S. gallons) accurately for only very low rates of flow and shall show a registration for all rates of flow. The entire assembly shall meet the design and performance specifications as determined by the Foundation for Cross Connection Control and Hydraulic Research, University of Southern California, ASSE, and FM Approvals (if on a fire line).

2.31 SERVICE CONNECTIONS

The term "service connection" shall mean the terminal end of a service connection from the public potable water system, i.e., where OWASA loses jurisdiction and control over the water at its point of delivery to the consumer's water system.

2.32 WATER PURVEYOR

The term "water purveyor" shall mean the operator of a public potable water system providing an approved water supply to the public.

2.33 UNAPPROVED WATER SUPPLY

The term "unapproved water supply" shall mean a water supply which has not been approved for human consumption by the NCDEQ.

2.34 USED WATER

The term "used water" shall mean any water supplied by a water purveyor from a public water system to a consumer's water system after it has passed through the point of delivery and is no longer under the control of the water purveyor.

SECTION 3. RIGHT OF ENTRY

- 3.1 Upon presentation of proper credentials and identification, authorized representatives from OWASA shall have the right to enter any building, structure, or premises during normal business hours, or at any time during the event of an emergency to perform any duty imposed by this Ordinance. Those duties may include sampling and testing of water, or inspections and observations of all piping systems connected to the public water supply. Where a consumer has security measures in force which would require proper identification and clearance before entry into their premises, the consumer shall make necessary arrangements with the security guards so that upon presentation of suitable identification, OWASA personnel will be permitted to enter without delay for the purpose of performing their specific responsibilities. Refusal to allow entry for these purposes may result in discontinuance of water service.
- 3.2 On request, the consumer shall furnish to OWASA any pertinent information regarding the water supply system on such property where cross-connections and backflow are deemed possible.

SECTION 4. ELIMINATION OF CROSS-CONNECTIONS: DEGREE OF HAZARD

- 4.1 When cross-connections are found to exist, the owner, his/her agent, occupant, or tenant will be notified in writing to disconnect the same within the time limit established by OWASA. The degree of protection required and maximum time allowed for compliance will be based upon the degree of potential hazard to the public water supply system. If, in the judgment of OWASA, an imminent hazard exists water service to the building or premises where a cross-connection exists may be terminated unless an air gap is immediately provided, or the cross-connection is immediately eliminated. The maximum time limits are as follows:
 - 4.2 Cross-connections with private wells or other auxiliary water supplies require immediate disconnection.
 - 4.3 All facilities which pose a severe potential hazard to the potable water system must have a reduced pressure principle backflow prevention assembly installed within 30 days of notification by OWASA.
 - 4.4 All industrial and commercial facilities not identified as a "severe hazard" shall be considered moderate hazard facilities. All moderate hazard facilities must install a reduced pressure principle backflow prevention assembly within 60 days of notification by OWASA.
 - 4.5 Water mains served by OWASA but not maintained by OWASA shall be considered cross-connections, with degree of hazard to be determined by OWASA. Degree of protection and maximum time limit for installation shall be based upon the degrees of hazard, as determined by OWASA.

- 4.6** In the event that OWASA personnel do not have sufficient access to every portion of a private water system (i.e., classified research and development facilities; Federal government property) to allow a complete evaluation of the degree of hazard associated with such private water systems, an approved reduced pressure principle backflow prevention assembly shall be installed within 60 days of notification by OWASA.
- 4.7** No person shall fill special use tanks or tankers containing pesticides, fertilizers, other toxic chemicals or their residues from the public water system except at an OWASA-approved location equipped with an air gap between the tank and the fill hose on the public water supply.
- 4.8** No person shall connect to a fire hydrant for any purpose, unless approved by OWASA.

SECTION 5. INSTALLATION OF ASSEMBLIES

- 5.1** All backflow prevention assemblies shall be installed in accordance with the specifications furnished by OWASA and/or in the latest edition of the North Carolina Building Code, whichever is most restrictive.
- 5.2** When it has been determined by OWASA, that a requested service requires the installation of a backflow prevention assembly, the consumer shall, prior to receiving such service, submit for review and approval, plans and specifications of the proposed facilities. The submittal shall include a description of proposed processes, operations, etc., in such detail as needed to evaluate potential effects on OWASA's system. Proposed assemblies shall be identified by size, manufacturer and model number or by specification.
- 5.3** Upon notification to the consumer by OWASA that a backflow prevention assembly(s) is necessary, the consumer shall install or cause to be installed entirely at the consumer's expense such assembly(s) as may be necessary.
- 5.4** When required, an approved backflow prevention assembly shall be installed on each service line to a customer's water system in accordance with the requirements of OWASA.
- 5.5** Backflow prevention assemblies shall be located downstream of the meter, in accordance with detailed specifications provided in OWASA's Cross Connection Control Manual.
- 5.6** All reduced pressure principle backflow prevention assemblies must be installed in a horizontal position and in a location in which no portion of the assembly can become submerged in any substance under any circumstance or be subjected to temperatures below freezing, in accordance with detailed specifications provided in OWASA's Cross Connection Control Manual. Pit and/or below grade installations are prohibited.

- 5.7** Backflow prevention assemblies shall be installed in such a manner that inspections, periodic testing and necessary repairs can be conveniently performed.
- 5.8** The installation of any backflow prevention assembly which is not approved by OWASA must be replaced by one which is approved by OWASA.
- 5.9** Removal of an approved backflow prevention assembly from a service connection that has been deemed a hazard by OWASA may result in immediate disconnection from OWASA's public water system.
- 5.10** The consumer is responsible to make sure a backflow prevention assembly is working properly upon installation and is required to furnish the following information to OWASA within fifteen (15) days after a backflow prevention assembly is installed:
- 5.10.1** Service address where assembly is located
 - 5.10.2** Owner (and address, if different from service address)
 - 5.10.3** Description of assembly's location
 - 5.10.4** Date of installation
 - 5.10.5** Installer (include name, plumbing company represented, plumber's license number).
 - 5.10.6** Type of assembly and size of assembly
 - 5.10.7** Manufacturer, model number, serial number
 - 5.10.8** Test results/report
- 5.11** When it is not possible to interrupt water service, provisions shall be made for a "parallel installation" of backflow prevention assemblies. OWASA will not accept an unprotected bypass around a backflow preventer.
- 5.12** Following installation, all backflow prevention assemblies are required to be tested by a Certified Backflow Prevention Assembly Tester within ten (10) days.

SECTION 6. TESTING AND REPAIR OF ASSEMBLIES

- 6.1** No water service shall be provided to any facility or service that requires the installation of a backflow prevention assembly until the installed assembly has been tested by a Certified Backflow Prevention Assembly Tester, and the test results have been received by OWASA.
- 6.2** Testing of backflow prevention assemblies shall be made by a Certified Backflow Prevention Assembly Tester approved by OWASA. Such tests are to be conducted upon installation, prior to receiving service and annually thereafter. A record of all testing and repairs is to be retained by the consumer. Copies of the records must be provided to OWASA within ten (10) business days after the completion of any testing, and/or repair work.
- 6.3** All Certified Backflow Prevention Assembly Testers shall submit a copy of their certification to OWASA prior to testing any backflow prevention assembly(s)

connected to OWASA public water system. The Tester is responsible for notifying OWASA within ten (10) days if their certification status or contact information changes.

- 6.4** Any time that repairs to backflow prevention assemblies are deemed necessary, whether through annual or required testing, or routine inspection by the consumer or by OWASA, these repairs must be completed within a specified time in accordance with the degree of hazard. In no case shall this time period exceed:
1. Severe Hazard Facilities - 10 days
 2. Moderate Hazard Facilities - 15 days
- 6.5** All backflow prevention assemblies with test cocks are required to be tested annually or at a frequency established by OWASA.
- 6.6** All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment which has been evaluated and/or approved by OWASA. All test equipment shall be registered with OWASA and shall be checked for accuracy annually (at a minimum), calibrated if necessary, and certified to OWASA as to such accuracy/calibration, employing a calibration method acceptable to OWASA (See Section 1.3.5).
- 6.7** It shall be unlawful for any consumer or Certified Backflow Prevention Assembly Tester to submit any record to OWASA which is false or incomplete in any material respect. It shall be unlawful for any Consumer or Certified Tester to fail to submit to OWASA any record which is required by this Ordinance. Such violations may result in any of the enforcement actions outlined in Section 8 of this Ordinance.

SECTION 7. FACILITIES REQUIRING PROTECTION

All facilities or services, with the exception of domestic services to single family residences, have been identified by OWASA as having a significant potential for backflow of nonpotable water into the public water supply system. Therefore, an approved backflow prevention assembly shall be required on all such services. Domestic services to single family residences may also be required to install approved backflow prevention assemblies if determined necessary by OWASA.

Approved backflow prevention assemblies, as defined in Section 2 of this Ordinance, are:

- a. Reduced pressure principle backflow prevention assembly
- b. Reduced pressure principle-detector assembly

All assemblies and installations shall be subject to inspection and approval by OWASA.

All assemblies installed prior to January 1, 2017, and which are not reduced pressure principle and reduced pressure principle-detector type are permitted to remain in service until OWASA determines their replacement to be necessary.

SECTION 8. ENFORCEMENT

- 8.1** The consumer or person in charge of any installation found not to be in compliance with the provisions of this Ordinance shall be notified in writing with regard to the corrective action(s) to be taken.
- 8.2** Such notice must explain the violation and give the time period within which the violation must be corrected. The time period set to correct a violation shall not exceed 30-days after receiving notice unless otherwise specified by Section 4. If the violation has been determined by OWASA to be an imminent hazard the consumer shall be required to correct the violation immediately.
- 8.3** In the event a consumer is found in violation of this ordinance and fails to correct the violation in a timely manner or to pay any civil penalty or expense assessed under this section, water service may be terminated, and shall be reestablished when the violation is corrected and any applicable civil penalties are paid.
- 8.4** The violation of any section of this ordinance may be punished by a civil penalty listed as followed:
- 8.4.1** Unprotected cross-connection involving a private water system which creates an imminent hazard - \$1,000.00 per day not to exceed \$10,000.00.
- 8.4.2** Unprotected cross-connection involving a private water system which is of a moderate or severe hazard - \$500.00 per day not to exceed \$5,000.00.
- 8.4.3** If in the judgment of OWASA, any consumer, manager, supervisor, or person in charge of any installation is found to be in noncompliance with the provisions of this Ordinance and/or neglects their responsibility to correct a violation, water service may be discontinued until compliance is achieved.
- 8.4.4** Failure of a consumer or certified tester to submit any record required by this Ordinance, or the submission of falsified reports/records may result in a civil penalty of up to \$500.00 per violation. If a certified backflow prevention assembly tester submits falsified records to OWASA, OWASA shall permanently revoke that tester.
- 8.4.5** Failure to test or maintain backflow prevention assemblies as required - \$200.00 per day.
- 8.5** Enforcement of this program shall be administered by the Executive Director of OWASA or his/her authorized representative.

SECTION 9. VARIANCES

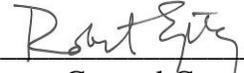
Any customer may apply for a variance from the application of the provisions of this Ordinance, provided, such application must be made within 21 days of receipt by

certified mail of OWASA's written demand for compliance. Such applications shall be made to OWASA's Executive Director, who may grant such a request only if the applicant is able to show that the variance requested will provide equivalent protection and presents no risk of contamination of the public water system. The determination of the Executive Director upon the variance request shall be the final agency decision.

Reviewed by General Counsel:

12/8/16

Date



General Counsel

Adopted by the Board:

12/8/16

Date



Clerk of the Board